



4.8 References

40 CFR 141. U.S. Environmental Protection Agency. "National Primary Drinking Water Regulations; Radionuclides; Proposed Rule." *Code of Federal Regulations*.

American Society for Testing and Materials. 1993. "E 380-93 Standard Practice for Use of the International System of Units (SI) (the Modernized Metric System)." In *Annual Book of ASTM Standards*. Philadelphia, Pennsylvania.

ARH-CD-775. 1976. *Geohydrologic Study of the West Lake Basin*. R. E. Gephart, P. A. Eddy, R. C. Arnett, and G. A. Robinson, Atlantic Richfield Hanford Company, Richland, Washington.

Beasley, T. M., L. A. Ball, and J. E. Andrews III. 1981. "Hanford-Derived Plutonium in Columbia River Sediments." *Science* 214(20):913-915.

BNWL-1979. 1976. *Environmental Surveillance at Hanford for CY-1975*. D. R. Speer, J. J. Fix, and P. J. Blumer, Pacific Northwest Laboratory, Richland, Washington.

BNWL-2305. 1977. *Association of Hanford Origin Radionuclides with Columbia River Sediment*. D. E. Robertson and J. J. Fix, Pacific Northwest Laboratory, Richland, Washington.

Clean Water Act. 1997. Public Law 95-217, as amended, 91 Stat. 1566 and Public Law 96-148 as amended.

Coughtrey, P. J., and M. C. Thorne. 1983. *Radionuclide Distribution and Transport in Terrestrial and Aquatic Ecosystems. A Critical Review of Data*. Vol. Two, A. A. Balkema, Rotterdam, The Netherlands.

Coughtrey, P. J., D. Jackson, and M. C. Thorne. 1983. *Radionuclide Distribution and Transport in Terrestrial and Aquatic Ecosystems. A Critical Review of Data*. Vol. Three, A. A. Balkema, Rotterdam, The Netherlands.

DeWitt, T. H., R. C. Swartz, D. J. Hansen, D. McGovern, and W.J. Berry. 1996. "Bioavailability and Chronic Toxicity of Cadmium in Sediment to the Estuarine Amphipod *Leptocheirus plumulosus*." *Environmental Toxicology and Chemistry* 15(12):2095-2101.

DOE/EH-0173T. 1991. *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance*. U.S. Department of Energy, Washington, D.C.

DOE Order 5400.1. "General Environmental Protection Program."

DOE Order 5400.5. "Radiation Protection of the Public and the Environment."

DOE/RL-91-50, Rev. 2. 1997. *Environmental Monitoring Plan, United States Department of Energy Richland Operations Office*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-92-12. 1992. *Sampling and Analysis of 100 Area Springs*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-92-67. 1992. *Final Remedial Investigation/Feasibility Study - Environmental Assessment Report for the 1100-EM-1 Operable Unit, Hanford*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-93-94, Rev. 1. 1994. *Plan and Schedule for Disposition and Regulatory Compliance for Miscellaneous Streams*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-95-55. 1995. *Hanford Site Background: Evaluation of Existing Soil Radionuclide Data*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.



- DOE/RL-96-12. 1996. *Hanford Site Background: Part 2, Soil Background for Radionuclides*. U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- Eisenbud, M. 1987. *Environmental Radioactivity from Natural, Industrial, and Military Sources*. Third Edition, Chapter 5, Academic Press, Inc., New York.
- EPA-570/9-76-003. 1976. *National Interim Primary Drinking Water Regulations*. U.S. Environmental Protection Agency, Office of Water Supply, Washington, D.C.
- EPA 822-R-96-001. 1996. *Drinking Water Regulations and Health Advisories*. U.S. Environmental Protection Agency, Office of Water, Washington, D.C.
- Gibbs, R. J. 1973. "Mechanisms of Trace Metal Transport in Rivers." *Science* 180:71-73.
- Hansen, D. J., W. J. Berry, J. D. Mahony, W. S. Boothman, D. M. Di Toro, D. L. Robson, G. T. Ankley, D. Ma, Q. Yan, and C. E. Pesch. 1996. "Predicting the Toxicity of Metal-Contaminated Field Sediments Using Interstitial Concentration of Metals and Acid-Volatile Sulfide Normalizations." *Environmental Toxicology and Chemistry* 15(12):2080-2094.
- HW-73672. 1962. *Dispersion of 300 Area Liquid Effluent in the Columbia River*. G. E. Backman, Hanford Atomic Products Operation, General Electric Company, Richland, Washington.
- Jenkins, O. P. 1922. *Underground Water Supply of the Region About White Bluffs and Hanford*. State of Washington Department of Conservation and Development, Olympia, Washington.
- Kabata-Pendias, A., and H. Pendias. 1984. *Trace Elements in Soil and Plants*. CRC Press, Inc., Boca Raton, Florida.
- Karickhoff, W. S., S. D. Brown, and A. T. Scott. 1978. "Sorption of Hydrophobic Pollutants on Natural Sediment." *Water Resources Bulletin* 13:231-248.
- Lambert, S. M. 1967. "Functional Relationship Between Sorption in Soil and Chemical Structure." *Journal of Agricultural and Food Chemistry* 15(4):572-576.
- Mudroch, A. 1983. "Distribution of Major Elements and Metals in Sediment Cores from the Western Basin of Lake Ontario." *Journal of Great Lakes Research* 9(2):125-133.
- National Council on Radiation Protection and Measurements. 1987. *Ionizing Radiation Exposure of the Population of the United States*. NCRP Report No. 93, Bethesda, Maryland.
- National Council on Radiation Protection and Measurements. 1993. *Limitation of Exposure to Ionizing Radiation*. Report No. 116, Bethesda, Maryland.
- Nelson, J. L., R. W. Perkins, J. M. Nielsen, and W. L. Haushild. 1966. "Reactions of Radionuclides from the Hanford Reactors with Columbia River Sediments." In *Disposal of Radioactive Wastes into Seas, Oceans, and Surface Waters*. International Atomic Energy Agency, Vienna, Austria, pp. 139-161.
- Patton, G. W., A. T. Cooper, and M. R. Tinker. 1997. "Ambient Air Sampling for Tritium - Determination of Breakthrough Volumes and Collection Efficiencies for Silica Gel Absorbent." *Health Physics* 72:397-407.
- PNL-3127. 1980. *Radiological Survey of Exposed Shorelines and Islands of the Columbia River Between Vernita and the Snake River Confluence*. M. J. Sula, Pacific Northwest Laboratory, Richland, Washington.
- PNL-5289. 1984. *Investigation of Ground-Water Seepage from the Hanford Shoreline of the Columbia River*. W. D. McCormack and J.M.V. Carlile, Pacific Northwest Laboratory, Richland, Washington.

- 
- PNL-6584. 1988. *GENII - The Hanford Environmental Radiation Dosimetry Software System*. B. A. Napier, R. A. Peloquin, D. L. Strenge, and J. V. Ramsdell, Pacific Northwest Laboratory, Richland, Washington, 3 vols.
- PNL-7124. 1989. *The Determination of the Penetrating Radiation Dose at Hanford*. L. A. Rathbun, Pacific Northwest Laboratory, Richland, Washington.
- PNL-7500. 1990. *1988 Hanford Riverbank Springs Characterization Report*. R. L. Dirkes Pacific Northwest Laboratory, Richland, Washington.
- PNL-7662. 1991. *An Evaluation of the Chemical, Radiological, and Ecological Conditions of West Lake on the Hanford Site*. T. M. Poston, K. R. Price, and D. R. Newcomer, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8073. 1992. *Hanford Site Ground-Water Monitoring for 1990*. J. C. Evans, R. W. Bryce, and D. J. Bates, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8148. 1992. *Hanford Site Environmental Report for Calendar Year 1991*. R. K. Woodruff, R. W. Hanf, and R. E. Lundgren (eds.), Pacific Northwest Laboratory, Richland, Washington.
- PNL-8150. 1992. *Methods for Estimating Doses to Organisms from Radioactive Materials Released into the Aquatic Environment*. D. A. Baker and J. K. Soldat, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8531. 1993. *Columbia River Monitoring: Distribution of Tritium in Columbia River Water at the Richland Pumphouse*. R. L. Dirkes, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8580. 1993. *Water Level Measurements for Modeling Hydraulic Properties in the 300-FF-5 and 100 Aggregate Area Operable Units*. M. D. Campbell, W. J. McMahon, and K. R. Simpson, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8654. 1993. *Columbia River Monitoring: Summary of Chemical Monitoring Along Cross Sections at Vernita Bridge and Richland*. R. L. Dirkes, G. W. Patton, and B. L. Tiller, Pacific Northwest Laboratory, Richland, Washington.
- PNL-8797. 1993. *Radiological Survey of Shoreline Vegetation from the Hanford Reach of the Columbia River, 1990-1992*. E. J. Antonio, T. M. Poston, and W. H. Rickard, Jr., Pacific Northwest Laboratory, Richland, Washington.
- PNL-8817. 1993. *Contribution of Hanford Liquid Effluents to Strontium-90 Levels in Offsite Soils*. R. E. Jaquish, Pacific Northwest Laboratory, Richland, Washington.
- PNL-9824. 1994. *Hanford Site Environmental Data 1993 - Surface and Columbia River*. L. E. Bisping, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10174. 1994. *A Qualitative Evaluation of Radionuclide Concentrations in Hanford Site Wildlife, 1983 through 1992*. T. M. Poston and A. T. Cooper, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10400. 1995. *Identification of Contaminants of Concern, Columbia River Comprehensive Impact Assessment—Draft*. B. A. Napier, N. C. Batishko, D. A. Heise-Craff, M. F. Jarvis, and S. F. Snyder, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10535. 1995. *Environmental Monitoring of Columbia River Sediments: Grain-Size Distribution and Containment Association*. M. L. Blanton, W. W. Gardiner, and R. L. Dirkes, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10574. 1995. *Hanford Site Environmental Report for Calendar Year 1994*. R. L. Dirkes and R. W. Hanf, Pacific Northwest Laboratory, Richland, Washington.



- PNL-10575. 1995. *Hanford Site Environmental Data for Calendar Year 1994 - Surface and Columbia River*. L. E. Bisping, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10698. 1995. *Hanford Site Ground-Water Monitoring for 1994*. P. E. Dresel, P. D. Thorne, S. P. Luttrell, B. M. Gillespie, W. D. Webber, J. K. Merz, J. T. Rieger, M. A. Chamness, S. K. Wurstner, and B. E. Optiz, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10711. 1995. *Location Analysis and Strontium-90 Concentrations in Deer Antlers on the Hanford Site*. B. L. Tiller, L. E. Eberhardt, and T. M. Poston, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10714. 1995. *Nonradiological Chemical Pathway Analysis and Identification of Chemicals of Concern for Environmental Monitoring at the Hanford Site*. M. L. Blanton, A. T. Cooper, and K. J. Castleton, Pacific Northwest Laboratory, Richland, Washington.
- PNL-10728. 1995. *Radionuclide Concentrations in Terrestrial Vegetation and Soil on and Around the Hanford Site, 1983 Through 1993*. T. M. Poston, E. J. Antonio, and A. T. Cooper, Pacific Northwest Laboratory, Richland, Washington.
- PNNL-11139. 1996. *Hanford Site Environmental Report for Calendar Year 1995*. R. L. Dirkes and R. W. Hanf (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11140. 1995. *1995 Surface Environmental Surveillance Data*. L. E. Bisping, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11472. 1997. *Hanford Site Environmental Report for Calendar Year 1996*. R. L. Dirkes and R. W. Hanf (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11473. 1997. *Hanford Site Environmental Data for Calendar Year 1996*. L. E. Bisping, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11795. 1998. *Hanford Site Environmental Report for Calendar Year 1997*. R. L. Dirkes and R. W. Hanf (eds.), Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11796. 1998. *Hanford Site Environmental Data for Calendar Year 1997*. L. E. Bisping, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-11803. 1998. *Hanford Site Environmental Surveillance Master Sampling Schedule*. L. E. Bisping, Pacific Northwest National Laboratory, Richland, Washington.
- PNNL-12088, APP. 1. 1999. *Hanford Site Environmental Surveillance Data Report for Calendar Year 1998*. L. E. Bisping, Pacific Northwest National Laboratory, Richland, Washington.
- Richardson, E. M., and E. Epstein. 1971. "Retention of Three Insecticides on Different Size Soil Particles Suspended in Water." *Soil Sciences Society of America Proceedings* 35:884-887.
- Safe Drinking Water Act. 1974. Public Law 93-523, as amended, 88 Stat. 1660, 42 USC 300f et seq.
- Shleien, B. 1992. *The Health Physics and Radiological Health Handbook, Revised Edition*. Scinta, Inc., Silver Spring, Maryland.
- Sinex, S. A., and G. R. Helz. 1981. "Regional Geochemistry of Hampton Roads Harbor and Lower Chesapeake Bay Sediments." *Environmental Geology* 3:315-323.
- Skoog, D. A., and D. M. West. 1980. *Analytical Chemistry*. Third Edition, Saunders Golden Sunburst Series, Philadelphia, Pennsylvania.

Suzuki, M., T. Yamada, and T. Miyazaki. 1979. "Sorption and Accumulation of Cadmium in the Sediment of the Tama River." *Water Research* 13:57-63.

Tada, F., and S. Suzuki. 1982. "Adsorption and Desorption of Heavy Metals in Bottom Mud of Urban Rivers." *Water Research* 16:1489-1494.

U.S. Geological Survey. 1995. *Nitrate Concentrations in Ground Water of the Central Columbia Plateau*. Open File Report 95-445, U.S. Geological Survey, Tacoma, Washington.

WA-94-1. 1995. *Water Resources Data, Washington Water Year 1994*. W. D. Wiggins, G. P. Ruppert, R. R. Smith, L. L. Reed, L. E. Hubbard, and M. L. Courts, U.S. Geological Survey, Tacoma, Washington.

Washington Administrative Code (WAC) 173-201A. "Water Quality Standards for Surface Waters of the State of Washington." Olympia, Washington.

Washington Administrative Code (WAC) 246-290. "Group A Public Water Supplies." Olympia, Washington.

Wells, D. 1994. *Radioactivity in Columbia River Sediments and Their Health Effects*. Washington State Department of Health, Olympia, Washington.

WHC-SD-EN-TI-006. 1992. *Hydrologic and Geologic Data Available for the Region North of Gable Mountain, Hanford Site, Washington*. R. E. Peterson, Westinghouse Hanford Company, Richland, Washington.

Wiggins, W. D., G. P. Ruppert, R. R. Smith, L. L. Reed, L. E. Hubbard, and M. L. Courts. 1996. *Water Resources Data, Washington Water Year 1995*. U.S. Geological Survey, Tacoma, Washington.

Wyerman, T. A., R. K. Farnsworth, and G. L. Stewart. 1970. "Tritium in Streams in the United States, 1961-1968." *Radiological Health Data and Reports*, pp. 421-429.